BeepBios

All the different kinds of beeps, boops and tones produced by all kinds of different BIOSes!

BIOSes like this:

This:

EPA POLLUTION PREVENTER

And more!

Chapters

— — — — — — — — — — — — — — — —

What even are BIOS beeps?

BIOS beeps are basically the computer talking to you. Stuff like, 7 beeps = RAM failure. Let me explain. The BIOS (Basic Input-Output System) runs a POST (Power-On Self Test) every time the computer turns on. The POST consists of many different hardware checks, all testing different parts of the computer, like the hard drive, RAM (Random Access Memory) chips and CPU (Central Processing Unit). If one of these test fails, the BIOS will beep to tell you something is wrong. These beeps always come in a pattern. For Phoenix, it's N beeps, pause, N beeps, pause, N beeps, pause, N beeps. For AMI, it's N long beeps, N short beeps etc. In this book you will be able to find different BIOS beep patterns and what the beeps mean.

AMI BIOS Beeps

Beep Code	Descriptions
1 short beep	DRAM (dynamic random access memory) refresh failure.
2 short beep	Parity circuit failure.
3 short beep	Base 64 K RAM failure.
4 short beep	System timer failure.
5 short beep	Process failure.
6 short beep	Keyboard controller Gate A20 error.
7 short beep	Virtual mode exception error.
8 short beep	Display memory Read/Write test failure.
9 short beep	ROM BIOS checksum failure.
10 short beep	How to replace the CMOS battery.
11 short beep	Cache memory error.
1 long, 2 short beeps.	Video card memory issue.
1 long, 3 short beeps.	Conventional/Extended memory failure.
1 long, 8 short beeps.	Display/Retrace test failed.
Two-tone siren	Low CPU (central processing unit) fan speed, voltage level issue.

Award BIOS Beeps

Beep Code	Description
1 long, 2 short beeps.	Indicates a video error has occurred and the BIOS cannot initialize the video screen to display any additional information.
1 long, 3 short beeps.	Video card not detected (reseat video card) or bad video card.
Beeps repeating endlessly.	RAM problem.
Repeated high frequency beeps while PC is running.	Overheating processor (CPU).
Repeated beeps alternating high & low frequency.	Issue with the processor (CPU), possibly damaged.

Dell BIOS Beeps

Beep Code	Description
1 beep	BIOS ROM corruption or failure.
2 beeps	Memory (RAM) not detected.
3 beeps	Motherboard failure.
4 beeps	Memory (RAM) failure.
5 beeps	CMOS battery failure.
6 beeps	Video card failure.
7 beeps	Bad processor (CPU).

IBM BIOS Beeps

Beep Code	Description
No beeps	Why won't my computer turn on?
1 short beep	Normal POST, computer is ok.
2 short beep	POST error, review screen for error code.
Continuous beep	No power, loose card, or short.
Repeating short beep	No power, loose card, or short.
1 long, 1 short beep	Motherboard issue.
1 long, 2 short beeps	Video (Mono/CGA display circuitry) issue.
1 long, 3 short beeps.	Video (EGA) display circuitry.
3 long beeps	Keyboard or keyboard card error.
1 beep, blank or incorrect display.	Video display circuitry.

Insyde BIOS Beeps

Beep Code	Description
5 short and 1 long beep.	Problem with the DMA page registers.
4 short, 1 long, 1 short beep.	Circuit for refreshing RAM not working.
4 short and 2 short beeps.	BIOS ROM checksum failure.
3 short, 1 long, 2 short beeps.	CMOS RAM test failure.
3 short, 1 long, 1 short, 1 long beep.	DMA controller failure.
3 short, 2 long, 1 short beep.	Interrupt controller failure.
3 short and 3 long beeps.	Keyboard self-test issue.
2 short, 1 long, 3 short beeps.	Video card not found.
2 short, 1 long, 2 short, 1 long beep.	No RAM installed or RAM not recognized.

Phoenix BIOS Beeps

Beep Code	Description and what to check
1-1-1-1	Unconfirmed beep code. Reseat RAM chips or replace RAM chips as possible solution.
1-1-1-3	Verify real mode.
1-1-2-1	Get CPU type.
1-1-2-3	Initialize system hardware.
1-1-3-1	Initialize chipset registers with initial POST values.
1-1-3-2	Set in POST flag.
1-1-3-3	Initialize CPU registers.
1-1-4-1	Initialize cache to initial POST values.
1-1-4-3	Initialize I/O.
1-2-1-1	Initialize power management.
1-2-1-2	Load alternate registers with initial POST values.
1-2-1-3	Jump to UserPatch0.
1-2-2-1	Initialize keyboard controller.
1-2-2-3	BIOS ROM checksum.
1-2-3-1	8254 timer initialization.
1-2-3-3	8237 DMA (direct memory access) controller initialization.
1-2-4-1	Reset programmable interrupt controller.
1-3-1-1	Test DRAM refresh.
1-3-1-3	Test 8742 keyboard controller.
1-3-2-1	Set ES segment to register to 4 GB.
1-3-3-1	Autosize DRAM.
1-3-3-3	Clear 512 K base RAM.
1-3-4-1	Test 512 base address lines.
1-3-4-3	Test 512 K base memory
1-4-1-3	Test CPU bus clock frequency.
1-4-2-4	Reinitialize the chipset.
1-4-3-1	Shadow system BIOS ROM.
1-4-3-2	Reinitialize the cache.
1-4-3-3	Autosize cache.
1-4-4-1	Configure advanced chipset registers.

1-4-4-2	Load alternate registers with CMOS (complementary metal-oxide semiconductor) values.
2-1-1-1	Set initial CPU speed.
2-1-1-3	Initialize interrupt vectors.
2-1-2-1	Initialize BIOS interrupts.
2-1-2-3	Check ROM Copyright notice.
2-1-2-4	Initialize manager for PCI (Peripheral Component Interconnect) options ROMs.
2-1-3-1	Check video configuration against CMOS.
2-1-3-2	Initialize PCI bus and devices.
2-1-3-3	Initialize all video adapters in system.
2-1-4-1	Shadow video BIOS ROM.
2-1-4-3	Display Copyright notice.
2-2-1-1	Display CPU type and speed.
2-2-1-3	Test keyboard.
2-2-2-1	Set key click if enabled.
2-2-2-3	Enable keyboard.
2-2-3-1	Test for unexpected interrupts.
2-2-3-3	Display prompt **Press F2 to enter SETUP**.
2-2-4-1	Test RAM between 512 and 640 k.
2-3-1-1	Test expanded memory.
2-3-1-3	Test extended memory address lines.
2-3-2-1	Jump to UserPatch1.
2-3-2-3	Configure advanced cache registers.
2-3-3-1	Enable external and CPU caches.
2-3-3-3	Display external cache size.
2-3-4-1	Display shadow message.
2-3-4-3	Display non-disposable segments.
2-4-1-1	Display error messages.
2-4-1-3	Check for configuration errors.
2-4-2-1	Test real-time clock.
2-4-2-3	Check for keyboard errors.
2-4-4-1	Set up hardware interrupts vectors.
2-4-4-3	Test coprocessor if present.
3-1-1-1	Disable onboard I/O ports.
3-1-1-3	Detect and install external RS232 ports.
3-1-2-1	Detect and install external parallel ports.
3-1-2-3	Re-initialize onboard I/O ports.
3-1-3-1	Initialize BIOS data area.
3-1-3-3	Initialize extended BIOS data area.
3-1-4-1	Initialize floppy controller.
3-2-1-1	Initialize hard disk controller.
3-2-1-2	Initialize local bus hard disk controller.
3-2-1-3	Jump to UserPatch2.

3-2-2-1	Disable A20 address line.
3-2-2-3	Clear huge ES segment register.
3-2-3-1	Search for option ROMs.
3-2-3-3	Shadow option ROMs.
3-2-4-1	Set up Power Management.
3-2-4-3	Enable hardware interrupts.
3-3-1-1	Set time of day.
3-3-1-3	Check key lock.
3-3-3-1	Erase F2 prompt.
3-3-3-3	Scan for F2 key stroke.
3-3-4-1	Enter CMOS setup.
3-3-4-3	Clear in POST flag.
3-4-1-1	Check for errors
3-4-1-3	POST done, prepare to boot operating system.
3-4-2-1	One beep.
3-4-2-3	Check password (optional).
3-4-3-1	Clear global descriptor table.
3-4-4-1	Clear parity checkers.
3-4-4-3	Clear screen (optional).
3-4-4-4	Check virus and backup reminders.
4-1-1-1	Try to boot with INT 19.
4-2-1-1	Interrupt handler error.
4-2-1-3	Unknown interrupt error.
4-2-2-1	Pending interrupt error.
4-2-2-3	Initialize option ROM error.
4-2-3-1	Shutdown error.
4-2-3-3	Extended block move.
4-2-4-1	Shutdown 10 error.
4-3-1-3	Initialize the chipset.
4-3-1-4	Initialize refresh counter.
4-3-2-1	Check for forced flash.
4-3-2-2	Check HW status of ROM.
4-3-2-3	BIOS ROM is OK.
4-3-2-4	Do a complete RAM test.
4-3-3-1	Do OEM (original equipment manufacturer) initialization.
4-3-3-2	Initialize interrupt controller.
4-3-3-3	Read in bootstrap code.
4-3-3-4	Initialize all vectors.
4-3-4-1	Boot the flash program.
4-3-4-2	Initialize the boot device.
4-3-4-3	Boot code was read OK.
Two-tone siren	Low CPU fan speed, voltage level issue.

[Extra!] Macintosh Startup Tones

Tones	Error
Error tone. (two sets of different tones).	Problem with logic board or SCSI (small computer system interface) bus.
Startup tone, drive spins, no video.	Problem with video controller.
Powers on, no tone.	Logic board problem.
High tone, four higher tones.	Problem with SIMM (single inline memory module).

Thank you for reading!

This book was made by Marko "Marko2155" Camandioti, for the people that don't wanna go searching through the inter webs to find these mysterious beeps and boops. If you don't always have internet, but have a local printer and are a techie/ tech guy and have to deal with these a lot, download, print a copy of BeepBios and staple it together for more use.